

REMARKS

Upon entry of the present amendment, claims 1-8 will remain pending in the above-identified application and stand ready for further action on the merits.

In order to more clearly define the present invention, claim 2 has instantly been amended. Specifically, from the options of methods for dehydrating wet porous crumbs, the centrifugal dehydration has been removed.

Further, new claim 8 has instantly been added, which is dependent from claim 1 and limits the dried porous crumbs to those produced by a specific method that is also recited in instantly amended claim 2.

The present amendments to the claims do not introduce new matter into the application as originally filed.

Rejection under 35 USC § 102(b) and 103(a)

In the outstanding Office Action dated October 2, 2007, claims 1 to 7 of the present application have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kusano in combination with Encyclopedia of Chemical Technology, Centrifugal Separation article (hereinafter "Encyclopedia"). Particularly, in response to the Applicants' argument that the centrifugal dehydration should be performed under appropriated conditions as recited in claim 2 of the present application, whereas Kusano is silent about such appropriate conditions, the Examiner states that such appropriate conditions are "no more than commercially known set of conditions" as shown in the Encyclopedia.

Traverse is made as follows.

The Applicants believe that neither Kusano nor the Encyclopedia teaches or suggests the centrifugation conditions as recited in claim 2 of the present application; however, in order to more clearly distinguish the present invention from the invention of Kusano, claim 2 of the present application has instantly been amended to remove the centrifugal dehydration from the options of methods for dehydrating the wet porous crumbs. On this point, more specific explanations are made below.

Conventionally, as apparent from Kusano (which states that the preferred dehydration method is the "mechanical squeezing" at col. 6, lines 56 to 59), the dehydration of wet porous crumbs has been performed by mechanical compression methods (page 5, lines 13 to 20 of the specification of the present application) because it has been believed that sufficient compression is needed to satisfactorily dehydrate and dry the wet porous crumbs; whereas, the present invention has been made based on an unexpected finding that dried porous crumbs having a very high oil-absorbing property can be obtained by dehydrating wet porous crumbs by dehydration methods in which the wet porous crumbs would not sustain such a strong compression force as exerted in the mechanical compression methods (see, for example, page 42, line 23 to page 43, line 9 of the specification of the present application). In this connection, it should be noted that, in the present specification, the expression "mechanical compression" is used; however, this expression means such a strong compression force as exerted in the mechanical compression methods and, of course, encompasses a strong compression force which is not actually caused by a mechanical means.

By gravity dehydration and filtration dehydration recited in claim 2 of the present application, the wet porous crumbs can be dehydrated substantially without compressing the wet

porous crumbs. Specifically, in the case of gravity dehydration and filtration dehydration recited in claim 2 of the present application, the forces applied to wet porous crumbs include only normal gravity and the weight of other crumbs positioned thereon. On the other hand, by the centrifugal dehydration, the wet porous crumbs are pressed against one another by gravity ranging from 300 to 3,000 G (described in claim 2 of the present application before the instant amendment) so that the crumbs are necessarily compressed with a relatively strong force.

Therefore, when the centrifugal dehydration of the wet porous crumbs is performed in the production of the dried porous crumbs of the present invention, it is required to carefully choose appropriate material, apparatus and conditions so as to avoid the compression of the wet porous crumbs. For example, in all of the Examples of the present application where the centrifugal dehydration is performed (i.e., Examples 6, 7, 8 and 12), the acceleration of gravity was as low as 900G (page 81, line 22 to page 82, line 2 (Example 6), page 83, lines 8 to 18 (Example 7), page 84, lines 10 to 15 (Example 8), and page 92, lines 5 to 8 (Example 12)).

Needless to say, Kusano reference which prefers the “mechanical squeezing” by no means teach or suggest that the compression of the wet porous crumbs during the centrifugal dehydration should be avoided, in spite of the fact that the more preferred “mechanical squeezing” necessarily involves a very strong compression of the wet porous crumbs. Rather, it is reasonable to consider that the centrifugal dehydration in Kusano, even if performed, should be performed under conditions such that the wet porous crumbs are strongly compressed as in the case of the “mechanical squeezing” so as to satisfactory dehydrate the wet porous crumbs.

Further, the Encyclopedia provides only general information on the centrifugal separation. More specifically, the Encyclopedia describes the mechanisms, maximum G values

(acceleration of gravity values) etc. of various centrifugal equipments, and all of the maximum G values described in the Encyclopedia are several tens of thousand. However, this document has no teaching or suggestion about dehydration conditions suitable for avoiding the strong compression of the wet porous crumbs.

Thus, it is apparent that neither Kusano nor the Encyclopedia has any teaching or suggestion about specific conditions for the centrifugal dehydration which are suitable for obtaining the dried porous crumbs of the present invention. However, as mentioned above, in order to more clearly distinguish the present invention from the invention of Kusano, the centrifugal dehydration has been removed from the options of dehydration methods recited in claim 2 of the present application.

With respect to the difference in oil-absorbing property between the case the dehydration is performed by the non-compression method as in the present invention and the case where the dehydration is performed by the compression method as in Kusano, the Examples and Comparative Examples of the present application clearly show:

that, in Examples 1 to 5, 9 to 11 and 13 to 16 where the dehydration of the wet porous crumbs is performed by gravity dehydration or filtration dehydration, the dried porous crumbs exhibit a high oil-absorbing property (1.1 to 1.3 in terms of the ratio of the weight an oil, which is absorbed by the dried porous crumbs when the dried porous crumbs are immersed in the oil at 25 °C under atmospheric pressure for 1 minute, to the weight of the dried porous crumbs), and

that, on the other hand, in Comparative Examples 4 and 5 of the present application where the dehydration of the wet porous crumbs is performed by mechanical compression method as in Kusano, the resultant dried porous crumbs exhibit poor oil-absorbing property (0.6

or 0.7 in terms of the above-mentioned ratio).

In this connection, it should especially be noted that, in Comparative Example 5 of the present application, the dehydration was performed in substantially the same manner as in the Examples of Kusano. Specifically, in Example 1 of Kusano, the dehydration of the wet porous crumbs was performed as follows:

"The obtained slurry of crumbs was dehydrated to give wet crumbs of water content of 45 wt % by twin rolls" (emphasis added) (col. 10, lines 11 to 12 of Kusano).

In the rest of the Examples (i.e., Examples 2 and 3) of Kusano, the dehydration was performed in the same manner as in Example 1 (col. 11, lines 2 to 4, and col. 12, lines 7 to 9 of Kusano).

In Comparative Example 5 of the present application, the dehydration of the wet porous crumbs was performed as follows:

"Dehydrated porous crumbs (having a water content of 75 % by weight) obtained in substantially the same manner as in Example 1 were further dehydrated using a twin roll type compression dehydrator (i.e., a mechanical compression type dehydrator), to thereby obtain a further dehydrated crumbs having a water content of about 43 % by weight" (emphasis added) (page 72, lines 7 to 13 of the present specification).

From the above, it is apparent that, in Comparative Example 5 of the present application where the dehydration of the wet porous crumbs is performed in substantially in the same manner as in the Examples of Kusano, the obtained dried porous crumbs exhibit poor oil-absorbing property as compared to that of the dried porous crumbs of the present invention.

Thus, neither Kusano nor the Encyclopedia has any teaching or suggestion about the importance of non-compression dehydration of the wet porous crumbs for achieving the high oil-absorbing property. This means that neither Kusano nor the Encyclopedia has any teaching or

suggestion about the method for obtaining the porous crumbs recited in claim 1 of the present application.

From the above, it is believed that both of the dried porous crumbs recited in claim 1 and the method recited in instantly amended claim 2 are neither anticipated by nor obvious over the prior art references.

It is believed that the present application is now in condition for allowance.

Reconsideration and early favorable action are earnestly solicited.

CONCLUSION


Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of pending claims 1-8 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: December 20, 2007

Respectfully submitted,

By 

John W. Bailey
Registration No.: 32,881
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant